

Editorials

Modern Syphilis—Still a Shadow on the Land

IN THE EARLY PART OF THIS CENTURY, 10% of the population of the United States and Europe was infected with syphilis. It touched all social strata and ages, from neonates to the elderly. Every physician was familiar with the disease in its many manifestations, and syphilis was so common that departments of dermatology and syphilology existed in many medical schools. Today, syphilis is a historical disease in the minds of much of the medical community, the policy makers, and the public, despite the fact that the incidence of infectious syphilis has been increasing since the mid-1950s, with discrete epidemics occurring at ten-year intervals. Why should we now be discussing this infection, as Judy L. Flores, MD, does with great thoroughness elsewhere in this issue of the journal?¹ Syphilis has not been featured on the covers of national news magazines. No celebrities have embraced it as their "pet" cause. No penicillin-resistant strains have been identified, and the dramatic late manifestations are increasingly rare. Yet, this disease persists, both in untreated individuals and in our society. In contrast to Lyme disease and the chronic fatigue syndrome, the lack of a public outcry about syphilis has resulted in only modest sums being committed to syphilis research and control, despite the fact that many more of our citizens are affected by syphilis than by these other conditions.

We have much to learn about, and from, syphilis: lessons in biology and medicine, and lessons in commitment and public policy. Syphilis is a fascinating and complex disease. It is caused by *Treponema pallidum*, a bacterium so fragile that it can be kept alive in the laboratory for only a few hours, yet so aggressive that it invades virtually every organ system, and so clever that some treponemes can persist in a host for decades despite the onslaught of an immune response powerful enough to spontaneously clear billions of their kin from the early skin lesions.

The two most recent epidemics of syphilis have occurred in patients who are at high risk for infection with the human immunodeficiency virus (HIV), homosexual men and African Americans. These epidemics have taught us much about the pathogenesis of syphilis and the interactions of these two sexually transmitted infections. Syphilis and other genital ulcer diseases are cofactors in the acquisition and transmission of HIV, probably due to a breach in the integument and the localization of CD4⁺ lymphocytes and macrophages in an ulcer. Thus, they serve as efficient transmitters of HIV in those infected or as available targets for infection in those exposed.

The acquired immunodeficiency syndrome (AIDS) epidemic has reminded modern clinicians that *T pallidum* invades the central nervous systems of a large number of patients with early syphilis. Further, there is increasing evidence that neurologic manifestations of syphilis are

more frequent in persons with both syphilis and HIV and that neurorelapse after standard benzathine penicillin therapy for syphilis is not uncommon in patients with HIV infection. Today's physicians face the difficult problems of determining which patients require lumbar puncture for the detection of central nervous system syphilis, of interpreting nonspecific cerebrospinal fluid (CSF) findings—such as pleocytosis and increased protein concentration—in patients with HIV, and of choosing optimal therapy. It has been recognized for years that standard therapy with benzathine penicillin fails to provide measurable penicillin concentrations in CSF, but until HIV, the weaknesses of standard therapy were not appreciated. And until recently, syphilis experts were confident that the more intensive therapy recommended for neurosyphilis would still be effective. Disturbing new reports suggest, however, that even high-dose intravenous penicillin G fails to cure neurosyphilis in some HIV-infected patients,^{2,3} prompting some experts to speculate that microbiologic cure may not be possible in these patients.

At the height of the most recent epidemic in 1990, the rate of infectious syphilis in the United States was higher than at any time in the past 40 years, and the number of infants born with congenital syphilis soared. With the exception of its prevalence in several northern cities such as St Louis, New York, and Chicago, syphilis is a disease that is concentrated in the South, increasingly in rural areas.⁴ Public clinics, which provide most syphilis care, are overcrowded, often closing their doors to new patients before noon, and are unavailable or inaccessible to many rural inhabitants. The racial distribution of syphilis further complicates focused efforts to control the disease. The rate of infectious syphilis in African Americans is 60-fold higher than in whites, yet neither poverty nor the reporting bias from public clinics can account for this disproportionality, as the rates in other minority groups demonstrate: the rate in African Americans is still 17-fold higher than that in Hispanics and 30-fold higher than that in Native Americans. The fact that we are aware of the disproportionate burden of syphilis in African Americans, yet fail to act, serves as evidence that racism or, at least, indifference exists in health care in this country. Intensive and focused public health approaches are desperately needed to control syphilis, yet these approaches must avoid stigmatizing the target populations, and they must earn the trust and cooperation of the patients. The specter of the Tuskegee study of untreated syphilis in rural black men, conducted by the US Public Health Service from 1932 to 1972, still affects the acceptance of public health efforts by many African Americans.⁵

The United States stands out as the only industrialized country that has failed to control syphilis. Since the mid-1950s when targeted and successful antisypilic campaigns were eliminated, the public health response to syphilis has been reactive, rather than proactive. It is only when the incidence of infectious syphilis rises alarmingly that increased funds for case identification and control are

made available. When the number of cases declines, so do funds, setting the stage for yet another outbreak. This cycle has occurred repeatedly in the past four decades, and we can expect it to continue unless we recognize and seize the opportunity to make a change. Syphilis is a disease that we can easily detect using inexpensive blood tests and can treat with an economical and readily available drug. The scientific means are available to control this infection, and financial resources could be made available; only the will is lacking.

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